MW & BC Funded Projects
MSU
1985-1986

TITLE: Winter Wheat Improvement

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: Allan Taylor

PERSONNEL: Ted Kisha, Hollis Pitler

AMOUNT FUNDED: $47,600.00

OBJECTIVES:
1) General support of winter wheat breeding project.

2) Breeding wheats with improved nitrogen use efficiency.

3) Determine variety characteristics for reduced tillage farming.

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TITLE: Development of malting and feed barley varieties adapted to Montana

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: Tom Blake

PERSONNEL: Patrick Hensleigh, Matt Kramer, J.S. Shin

AMOUNT FUNDED: $46,000.00

OBJECTIVES:
1) The development of high yielding spring barley cultivars adapted to dryland, irrigated and recrop conditions in Montana.

2) Development of feed and malting barley varieties with unique quality characteristics suitable for dryland production.

3) Evaluation of winter barley populations for hardiness and yield potential.

4) Improved evaluation of barley varieties and advanced lines with emphasis on disease resistance and yield potential at varying yield levels.

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TITLE: Support for Montana Agricultural Experiment Station Spring Wheat Breeding Project

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: W. Larry Alexander

PERSONNEL: Susan P. Lanning

AMOUNT FUNDED: $45,335.00

OBJECTIVES:
1) To enable the MAES spring wheat breeding project into becoming a more viable, aggressive research effort.

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TITLE: Evaluation of various materials and practices

INSTITUTION: Montana State University

DEPARTMENT: Research Centers

RESEARCHERS:

AMOUNT FUNDED: $30,000.00

OBJECTIVES:
1) To evaluate the effects of differing systems on crop variety performance under the diverse environments represented across the Montana Research Center network.

2) To evaluate the potential fit of other materials, concepts and techniques with various cropping systems

employed.

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TITLE: Control of soil-borne diseases of wheat and barley

INSTITUTION: Montana State University

DEPARTMENT: Plant Pathology

RESEARCHERS: Don Mathre

PERSONNEL: Robert Johnston

AMOUNT FUNDED: $26,520.00

OBJECTIVES:

1) Cephalosporium stripe of winter wheat

   a) Continue development of additional germplasms with resistance to Cephalosporium stripe.

   b) Evaluate root strength as a characteristic involved in resistance to Cephalosporium stripe.

   c) Evaluate methods of handling wheat straw infected with Cephalosporium so as to minimize the build-up of this pathogen.

2) Take all root rot of irrigated spring wheat. Continue evaluation of Baytan and microbiological seed treatments for control of this disease.

3) Common "dryland" root rot of spring wheat. Evaluate new sources of resistance in spring wheat from Canada.

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TITLE: Acquisition of Specialty Research No-Till Drill

INSTITUTION: Montana State University

DEPARTMENT: Northern Agricultural Research Center

RESEARCHERS: Harold A. Houlton

AMOUNT FUNDED: $20,000.00

OBJECTIVES:
1) The three research centers -- Northern Agricultural Research Center, Havre; Central Agricultural Research Center, Moccasin; and the Triangle Research Center, Conrad -- are in serious need of improved research seeding equipment; applicable to studies of no-till or limited tillage techniques for cropping systems development.

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TITLE: Evaluation of Proanthocyanidins and B-Glucans on the Nutritional Quality of Barley

INSTITUTION: Montana State University

DEPARTMENT: Animal & Range Sciences and Home Economics

RESEARCHERS: C.W. Newman
M.K. Petersen
R.K. Newman

AMOUNT FUNDED: $14,500.00

OBJECTIVES:
1) To determine the effect of proanthocyanidins and/or B-glucans on the digestibility of protein and energy in barley.

2) To determine if an interaction occurs between proanthocyanidins and B-glucans on protein and energy digestibility in barley.

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TITLE: The Influence of Conservation Tillage Systems on Grasshopper Biology, Damage, and Population Levels

INSTITUTION: Montana State University

DEPARTMENT:

RESEARCHERS:

AMOUNT FUNDED: $10,700.00

OBJECTIVES:
1) Determine damaging species in small grain production under conservation tillage systems in eastern Montana,

determine seasonal distribution of species damaging small grains under conservation tillage systems in eastern Montana, develop a data base for grasshopper development models in small grains production under conservation tillage systems.

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TITLE: Potentials of Montana Soils

INSTITUTION: Montana State University

DEPARTMENT: Plant & Soil Sciences

RESEARCHERS: Gerald A. Nielsen
Clifford Montagne

AMOUNT FUNDED: $10,000.00

OBJECTIVES:
The following objectives represent major components of MAES project 372 designed to obtain and deliver facts about the potentials of Montana soils. These components must rely largely upon the agricultural sector for funding. They are ranked from highest (1) to lowest (4) priority based upon the investigators' assessment of present research opportunities and benefits to farmers.

1) Develop methods of aerial remote sensing and video image analysis to serve agricultural research and management.

2) Test and extend the Montana Agricultural Potentials System (MAPS).

3) Obtain new physical and chemical data for major soils for testing soil water prediction models.

4) Determine advantages of adjusting fertilizers, crop varieties, and other management inputs for different soil types within the same fields.

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TITLE: Soil and plant nutrition for control of take-all root rot in wheat

INSTITUTION: Montana State University

DEPARTMENT: Southern Agricultural Research Centers-Huntley

RESEARCHERS: Richard E. Engel
Don Mathre

AMOUNT FUNDED: $7,200.00

OBJECTIVES:
1) Determine the effectiveness of chloride salts and micronutrients in controlling yield losses in spring wheat due to take-all root rot.

2) To compare the effectiveness of several chloride fertilizer placements in reducing take-all severity.

3) To determine if the soil inorganic nitrogen form is important in take-all severity.

4) To provide to the grower, a fertilizer management program that can be used to minimize yield losses due to take-all.

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TITLE: Treatment of Montana Wheat Flours to Improve the Range of Uses and to Eliminate Wheat Allergy Properties

INSTITUTION: Montana State University

DEPARTMENT: Plant Pathology

RESEARCHERS: D.C. Sands
C.F. McGuire
C.W. Newman
Rosemary Newman
Tom Blake

AMOUNT FUNDED: $4,500.00

OBJECTIVES:
1) A patent application will be written describing an enzymatic treatment of high strength flours rendering them useful in a broader range of baking, and possibly rendering them "non-allergenic".